

FIG. 1

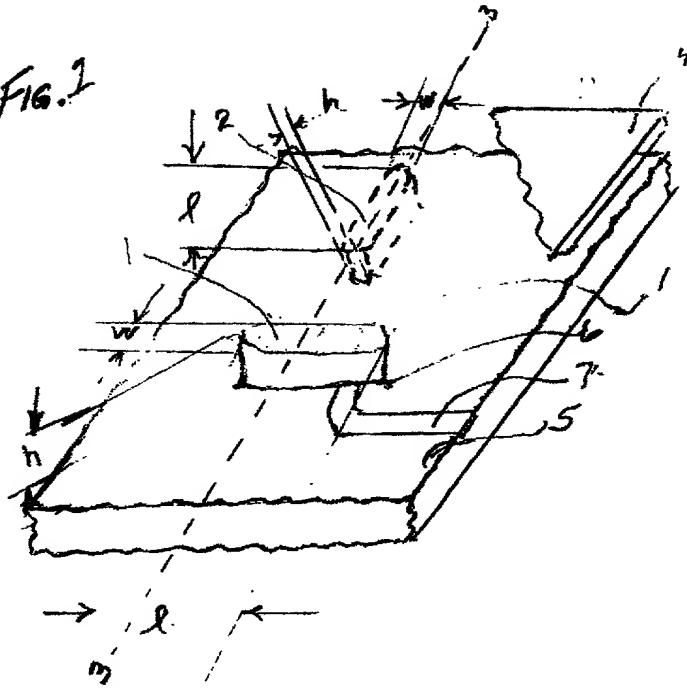


FIG. 3

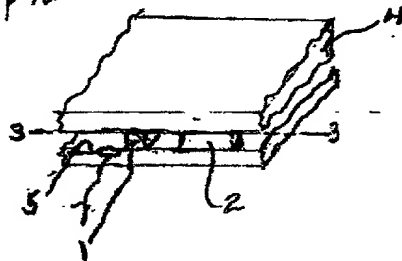


FIG. 2

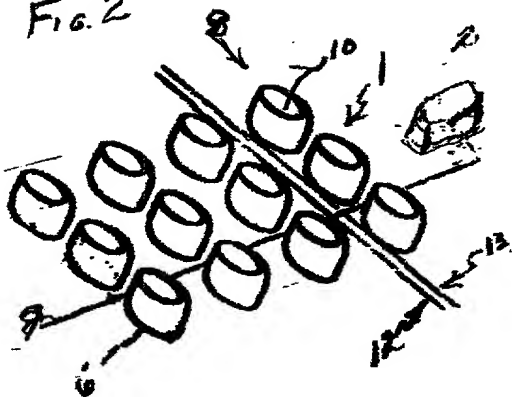


FIG. 4

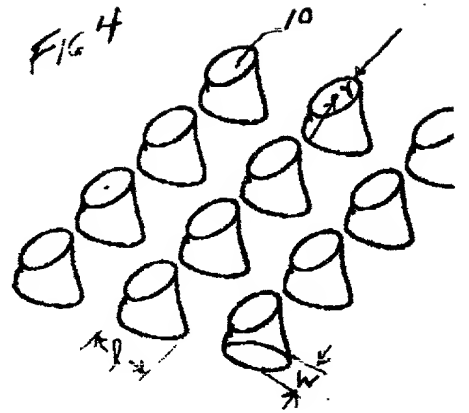
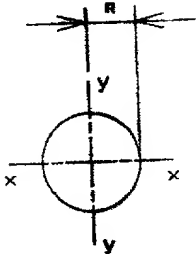


FIG. 5

FIG. 5A

Circle:



Area Moment of Inertia:

$$I_{xx} = 0.785 R^4 (\pi R^4 / 4)$$

FIG. 5B

Ellipse:

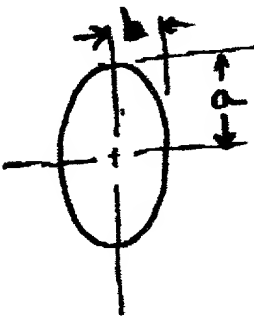
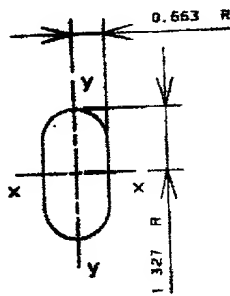


FIG. 5C

Oval:

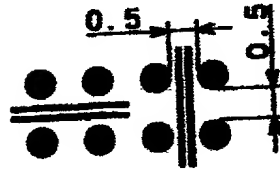
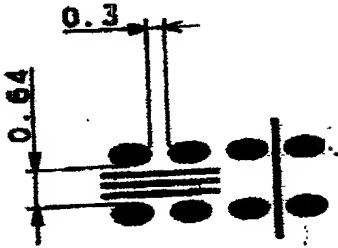


$$I_{xx} = 1.634 R^4$$

$$I_{yy} = 0.410 R^4$$

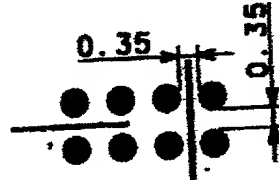
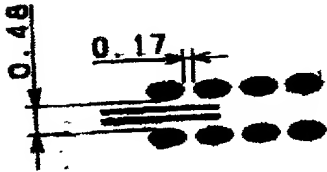
COLUMN  
B

PRIOR ART  
COLUMN  
A



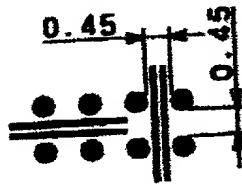
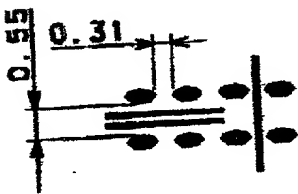
600 ball  
500 contact  
1000 pitch

FIG. 6 A



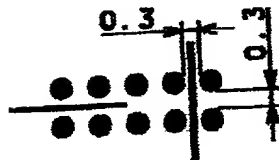
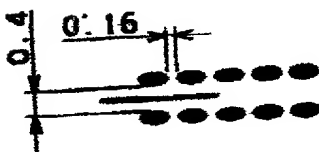
500 ball  
450 contact  
800 pitch

FIG. 6 B



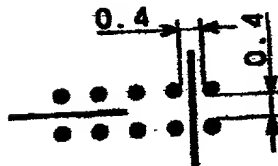
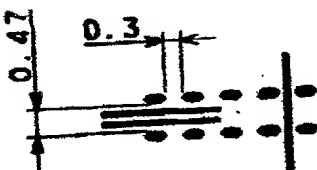
500 ball  
350 contact  
800 pitch

FIG. 6 C



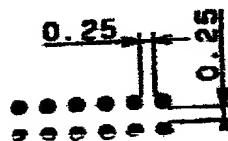
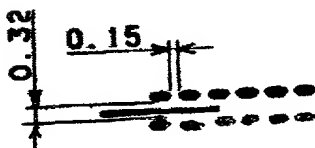
400 ball  
350 contact  
650 pitch

FIG. 6 D



300 ball  
250 contact  
650 pitch

FIG. 6 E

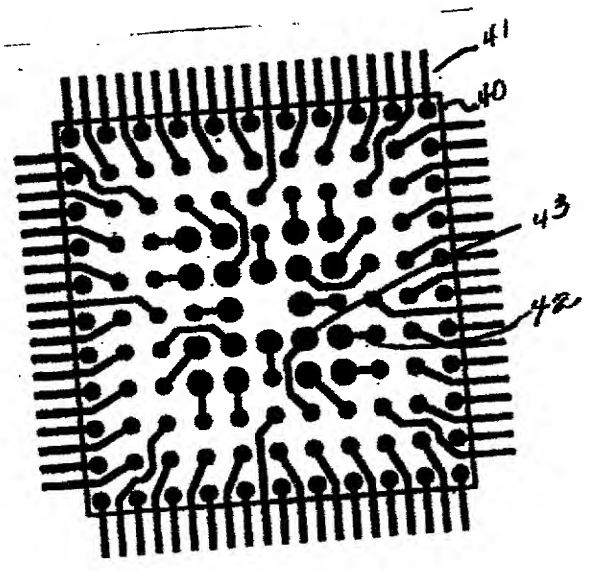


300 ball  
250 contact  
500 pitch

FIG. 6 F

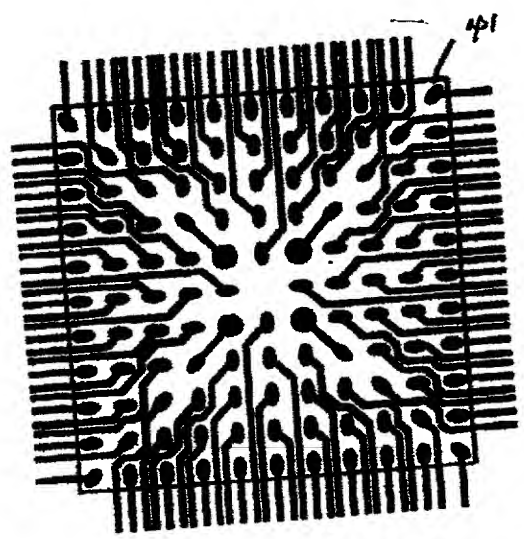
FIG. 6 A

FIG. 7  
PRIOR ART



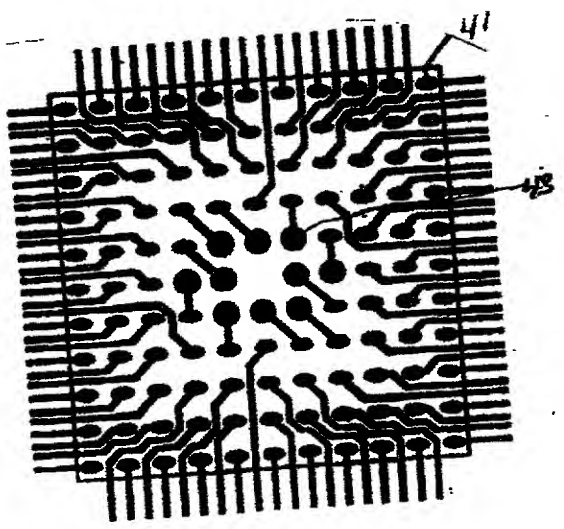
11x11  
80 out-edge  
20 out-vias  
100 total

FIG. 9



11x11  
112 out-edge  
4 out-vias  
116 total

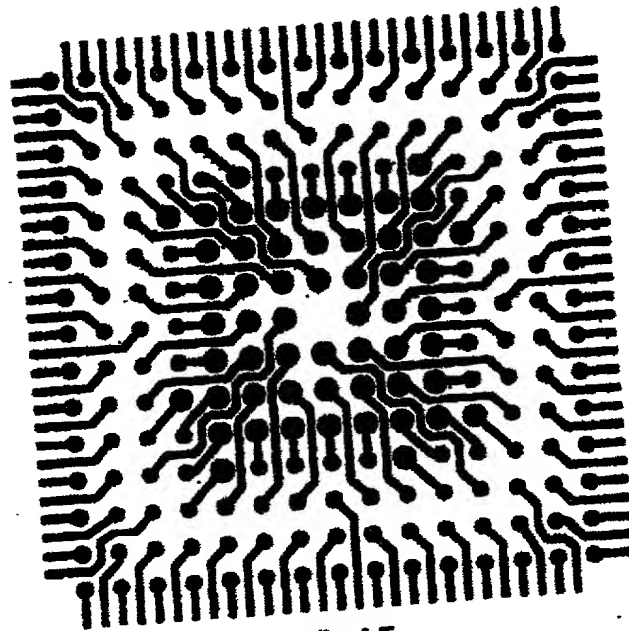
FIG. 8



11x11  
100 out-edge  
10 out-vias  
110 total

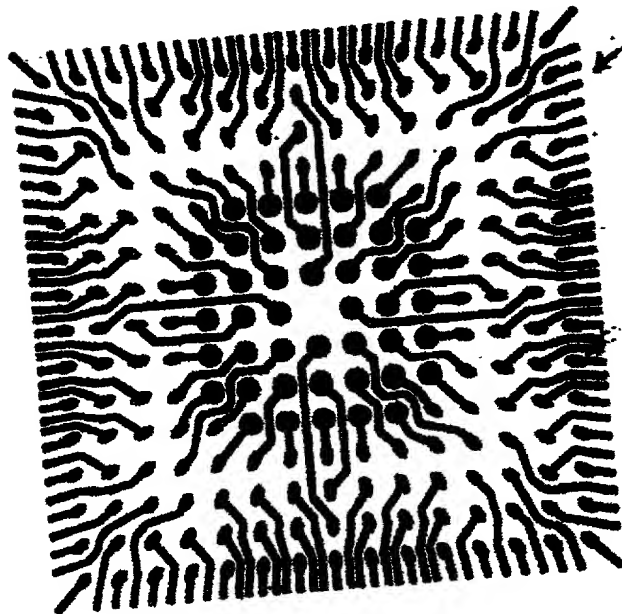
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FIG 10  
PRIOR ART



15x15  
112 out by edge  
56 out by vias  
168 total

FIG 11



15x15  
136 out by edge  
44 out by vias  
180 total

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